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NEW YORK, SATURDAY, MAY 17, 1924

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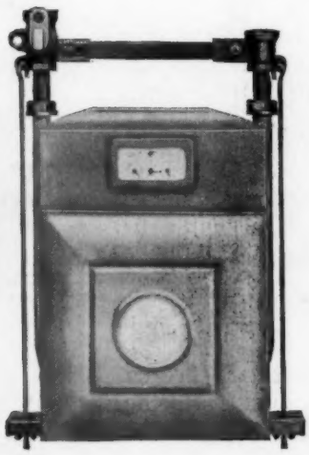
with
L-S Meter Connections and Shelves



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100 Park Place, New York

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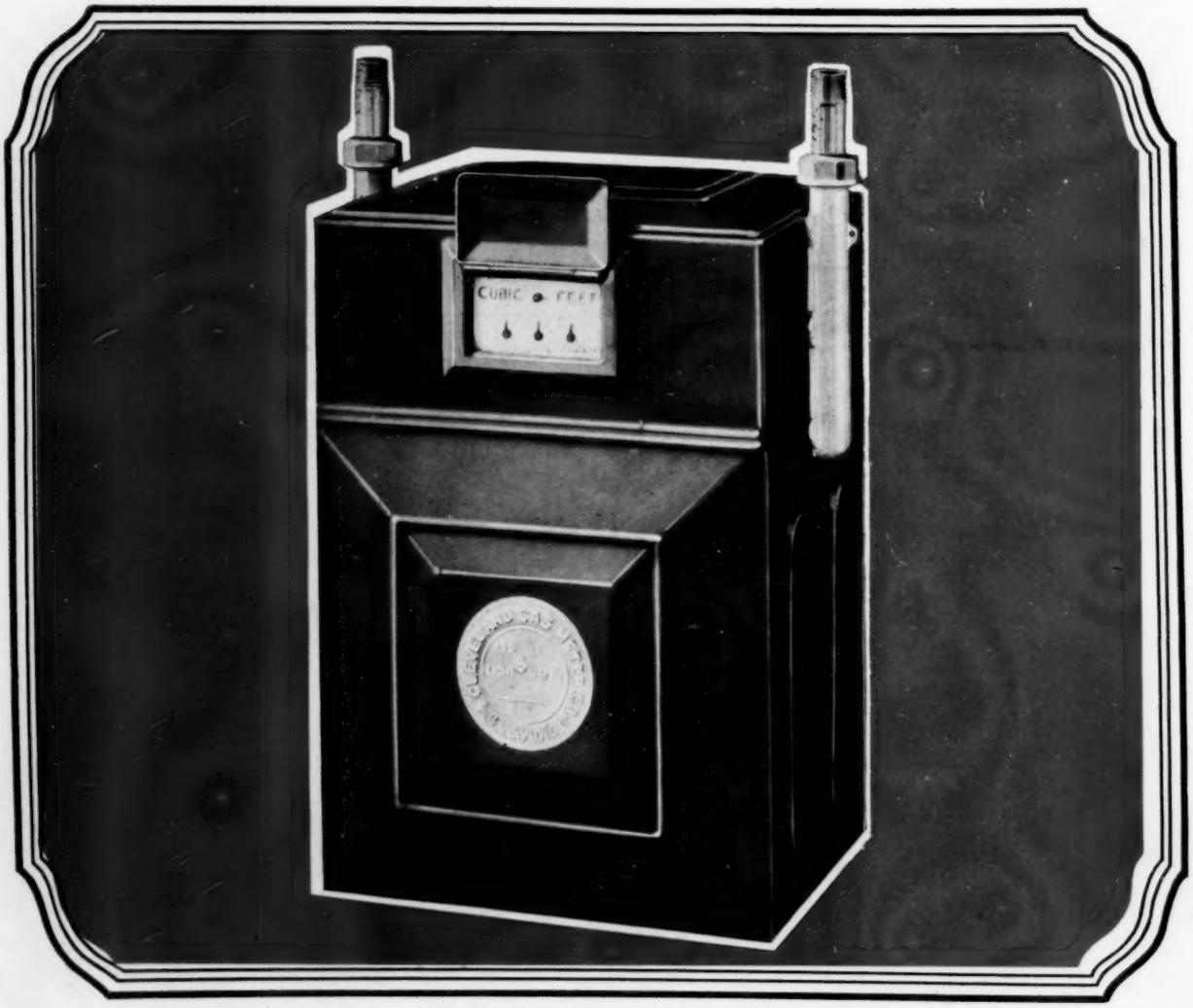

Dependability in a gas meter means a constant measure of reliable service; this is appreciated by the Superintendent, the Meter-reader and the Consumer.

Cleveland Gas Meters have a reputation for dependable service, the result of over thirty years' experience in manufacturing.

Our thoroughly organized and completely equipped factory assure you that the workmanship, materials, accuracy and general efficiency are unequaled.

"A" and "B" Types Meter Repairing

CLEVELAND GAS METER COMPANY

2180 East 65th Street **Cleveland, Ohio**

P. F. McENANEY, 85 Hancock St., Brooklyn, N. Y., Eastern Representative

HONG KONG
Daily Capacity . 600,000 Cu. Ft.
Labor Cost . . . . Even with cheap Asiatic labor the Glover-West Vertical Retort System is a paying proposition.
West Gas Improvement Co. of America, Inc.
150 Nassau Street New York
COMPANY MEMBER AMERICAN GAS ASSOCIATION
GLOVER-WEST
Vertical Retorts
for continuous carbonization of coal
INSTALLED · IN · ALL · PARTS · OF · THE · WORLD

Look at the Advertisements for the Leaders in the Industry.

American Gas Journal

SIXTY-FIFTH YEAR

Published Weekly by American Gas Light Journal, Inc., 53 Park Place, New York, N. Y.

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ISMAR GINSBERG, Technical Editor

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AMERICAN
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Handling Complaints

The details of a gas company's way of handling complaints

O. C. Vieweg

Statistician, Elmira Water, Light & Railroad Co.

COMPLAINTS from customers are welcomed, and carefully investigated, by the Elmira Water, Light and Railroad Company, which has about 25,000 gas and electric accounts, in addition to a street railway system.

With the help of our employees we endeavor to anticipate complaints before our customers notice any trouble.

Frequently various employees can detect and report defects in our gas, electric, or street railway service, before they become serious enough to cause complaints from our customers. Prompt attention in such cases prevents complaints.

We make it easy for employees to report complaints and troubles that they notice or hear about from our customers. We have a form (A) which is printed in duplicate, 25 sets to a book. Each employee who comes in daily contact with our customers has one of these books.

Easy for Employees to Report Complaints

The original reason for this form was that the public expects any of our employees to know about all parts of our business. Many of our customers could not understand, for example, why a street car conductor should not know all about gas meters. With these forms an employee writes down a customer's inquiry, or asks the customer himself to write it down.

These forms are used for a great variety of purposes. An employee may notice a curb well cover gone, a pole or cross-arm in bad shape, or perhaps a poor joint on the street railway system. Or a customer may tell a meter reader or setter of poor service, or complain of high bills. Again, a customer may ask to have a pole removed, or ask for information which an employee cannot answer. And an employee may know of a good prospect for gas or electric appliances.

In all such cases one of these slips is filled out and dropped into any of the numerous mail baskets around our various properties. (Serious trouble such as wires down, or gas leaks, are reported by telephone).

The Answer to the Complaint

The back of this form provides for an answer. All these reports are answered as promptly as possible, telling in the case of a complaint what was found and done.

We also make it easy for our customers to complain. All of our newspaper advertisements have the following at the bottom:

GOOD GAS, ELECTRIC AND STREET RAILWAY SERVICE

Is Your Service Good? If Not, Please Let Us Know. Office: Lake and Water Sts. Telephone 2400.

The attached advertisement is an example of our efforts to secure suggestions and complaints from our customers.

About once a year we send a card to our customers, asking for suggestions and complaints.

This year we also sent to each of the local ministers the following letter, signed by Mr. F. H. Hill, our vice-president and general manager:

An Appeal to Ministers

"While it has always been the aim of this company to render good service, during the past few months we have made particular efforts to locate and remedy defects in our service, and we expect to continue our efforts during 1924.

"You probably have noticed the lines at the bottom of our recent newspaper advertisements (as above).

"This is a sincere effort on our part to secure from our customers criticisms that will help us improve our service.

"Unfortunately many customers keep their troubles to themselves, or tell their neighbors, instead of us. The result is, we have no opportunity to remedy or explain a misunderstanding or a defect in our service about which we know nothing.

"I know that a man in your position gets a general impression of the opinions of his people. For this reason it occurred to me that perhaps you could give me some very valuable suggestions as to what we can do during 1924 to render better service to our community.

"Any help you can give me will be very greatly appreciated.

"With best wishes for a successful New Year,

"Sincerely yours."

Complaints on High Bills

We have a service department, which takes care of high bill complaints. We also have a dispatcher's office, which takes care of all other complaints, and of trouble calls (poor or no gas, leaks, faulty appliances, etc.)

High bill complaints are very carefully investigated and every effort is made to get at the cause of the complaint and to satisfy the customer. Frequently conversation with the complaining customer enables us to discover that some special condition, such as sickness or visitors, has caused an increased

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A Few of the High Spots of Outstanding Importance

The gas industry today and its problems

Alexander Forward

Secretary-Manager, American Gas Association

IN ATTENDING the meetings of gas men since the beginning of the year I have been especially impressed with the fact that relative prosperity has not in any way lessened interest in the work which we are all trying to do and has not in the least disturbed our visions for the future. The gas business today is a good business. Its public relations are on better footing than ever before; its public regulation is more sympathetic and reasonable than at any time since regulation began; its securities command respect in the markets of the world. When conditions are unfavorable and times are bad it is an easy matter to secure the close attention of our strongest minds to the problem of finding solutions. When everything is going well, as it is at this time, there is usually a tendency to slacken efforts. Instead, I find that, without exception, our people are finding new uses for our product and are building for bigger and better things tomorrow.

Gas Industry Has Grown Astonishingly in Past Decade

Figures are usually dull, and yet to those who will pause for analysis they are full of meaning. I have before me the statement of annual sales of manufactured gas since the beginning of the industry and the results are both astonishing and significant. A mere recital of billions of cubic feet means little, but the fact that the sales of gas in 1923 were about double those of 1913 means a great deal. Putting it another way, the increase in sales in the ten years equals the output of 1913.

The year 1913, just preceding the outbreak of the war in Europe, does not seem very far away to any of us, and yet the sales of manufactured gas in the decade ending last year practically equalled the total sales of gas during all of the preceding forty years. The increase between 1913 and 1923 equals the sum of all the previous increases and was more than double the increase in the decade immediately preceding 1913.

We are adding 400,000 new customers annually. Last year gas manufacturers sold three-quarters of a million ranges and 425,000 water heaters. The gas companies sold $45,000,000 worth of appliances.

Increase in Gas Consumption Per Customer

A most significant factor in the present and in the future is the remarkable increase in the average use per customer. It is almost unbelievable that in the period 1913 to 1923 the sales of gas per capita increased 30.2 per cent. The actual figures show that the total increase is 2,215 cubic feet, or from 7,335 in 1913 to 9,550 in 1923.

Future Pregnant With Possibilities

Yet, in spite of all this wonderful showing, there is no disposition on the part of our men in the industry to sit down and fold their hands. We know there may be fluctuations from year to year, due mainly to currents beyond our control, but it may safely be said not only that the gas business is in a much more favorable position than ever before in its history, but that the future holds even greater promise.

How could any one of us, realizing as we must the possibilities of gas as a heating medium, fail to comprehend what may be accomplished in the years to come in extending the industrial uses of gas to a point as little dreamed of now as was our present tremendous development in the mind of the gas man of a generation ago?

We now know that thousands of separate and individual uses for gas in industry exist, as well as we know the fact that we render constant, unfailing and indispensable service in nine million American homes.

Co-operation With Regulatory Commissions

There are other matters in which we cannot stand still and in some of them we may and do co-operate fully with other organizations also engaged in the service of the public. Our relations with the regulatory commissions have steadily improved as the men in public office have become better and better informed concerning the true situation with public utilities. The gas men and the electric men, and the other public service officials, no longer approach state commissions hat in hand to ask for favors, but may present their just claims with dignity and, for the most part, be assured of fair and impartial hearing. The hat in hand policy was abolished years ago by one commission with whose work I am thoroughly familiar.

One of the most telling arguments for adequate rates is in the need for necessary capital and credit to properly finance extensions and improvements in public service demanded by the needs of our advancing civilization. Only recently I took part in the hearings on a bill which proposed to set back the clock of human progress twenty years by relegating control over rates in certain instances to local

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*Delivered at the annual convention of the Indiana Gas Association.

Gas Sales Association of New England Holds Annual Meeting

The annual meeting of the Gas Sales Association was held in Boston on Friday, May 9, 1924. Reports of the various committees were made to the association, also the Governor's address and the report of the secretary-treasurer.

Mr. H. J. Pettingell, Jr., chairman of the outing committee, reported that the committee had tentatively set Friday, June 13, as the day for the outing. This date was made as it comes on the second Friday in June, which is the same time that the association has its meetings during the winter.

The place selected is Wardhurst for the morning events and the Suntaug Inn for the afternoon events and dinner.

Broadsides and complete information will be mailed from time to time to the members of the association.

The Gas Sales Association of New England hopes and expects that as many men as possible connected with the gas industry will make a special effort to attend this outing.

Report of Secretary-Treasurer

The report of the secretary-treasurer, Mr. J. S. Sumner, was interesting. At the beginning of the 1923-1924 season the association had a total membership of 160. During the year one member died, three withdrew and twelve were automatically dropped for non-payment of dues, that left a membership of 144 members. During the year 30 new members were added, making the total membership to date of 174 members.

The average attendance at the meetings held during the year has been 165, made up as follows, 117 members and 48 guests, based on an average of 167 members, shows an attendance of 70 per cent, which may be considered an excellent showing.

Mr. Sumner estimated that the total cash on hand after the meeting of tonight would be $485.73.

The auditing committee, Mr. Norton chairman, reported that they had audited the books of the secretary-treasurer and found them to be correct.

Governor Woodhead's Report

Governor Woodhead of the association said in part:

"We have found by the report of the secretary-treasurer that we have had a successful year. Our membership is limited to 175 members and we have at this time 174 members in good standing, and the balance of cash on hand is a healthy one.

"We have believed that rather than accumulate a balance in the treasury we should pass on to the members any financial gain from the issues of this association.

"Our expenses have increased, but, as you can see, even with these added expenses, we have a good cash balance.

"During the past year we have held the stated number of meetings, at which we have endeavored to present speakers who would talk on subjects of interest to you.

Permanent Secretary-Treasurer

"The one recommendation that your board of managers and governor made last year regarding the permanent appointment of a secretary-treasurer has been successful. The combined office of secretary-treasurer has functioned better than by having the offices separate.

"Now for the future. It appears to me that this association has achieved a place in the industry. We generate some excellent ideas in these meetings, we should follow these ideas into execution.

"You may say they are small things and unimportant, and I say to you that is one of the great faults of the industry—the neglect of these small things, which help the industry at large.

"The electric people could teach us a great deal about hammering the small things here and there until they take root into the one big thing that helps the industry.

Do Not Neglect the Small Things

"We all want to do the thing that is spectacular and neglect the small things. It hasn't been many years since the gas companies have been teaching their employees to be courteous. Also within the past few years employees' associations have been formed. These were small, unimportant things which today have developed into important things in the gas industry.

"We should take advantage of every opportunity we can; the small things here and there; to do all we can when called upon.

"We must build up favorable publicity by advertising. I do not mean only by advertising in the newspapers; do any kind of advertising that will bring your utility company to favorable attention of your customers. If newspapers will do it, that is the method; if exhibitions will do it, that is the method.

"We must try to build the idea in the people's mind that our industry is a coming industry and that we are just beginning to grow, and with this end in view we should work out some idea as to what we mean to do.

"This association has appointed an advertising committee which is going to arrange for you a definite program with recommendations which will assist you in building up this program of favorable publicity."

(Continued on page 471)

INDUSTRIAL GAS LESSONS

IF IT'S DONE WITH HEAT — YOU CAN DO IT BETTER WITH GAS

Lesson No. 20

The Ether

What Is "The Ether"

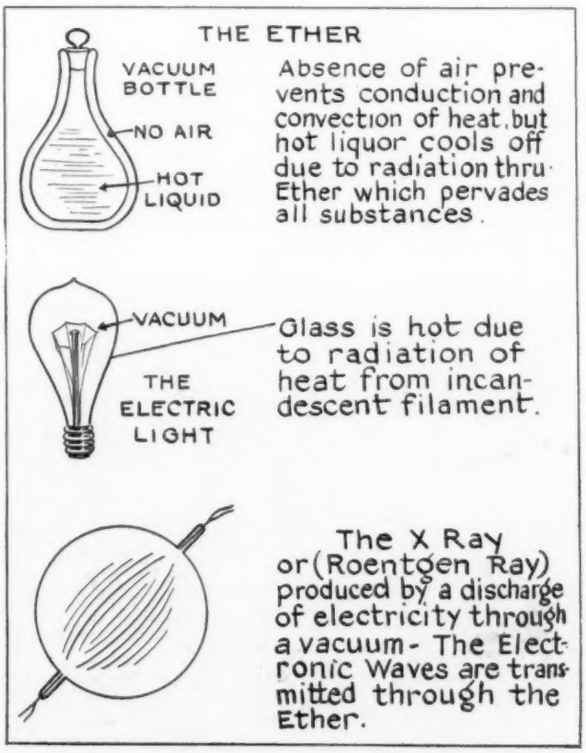
In the aforegoing explanation the word ether has been used, but up to this point no explanation of what is meant by ether has been given. This purposely so, for the initial fact to be impressed upon the mind of the reader was that heat is energy and not matter and that this truth is brought home in a particularly emphatic manner when considering the movement of heat through the ether by radiation. Matter cannot and does not possess this property. The ether is a name for something that scientists consider immaterial, that is, without substance, intangible and in certain sense incomprehensible, but still forming a very useful means of explaining the mechanism of different natural phenomena.

It must be emphasized that the gas engineer in dealing with heat is concerned with a manifestation of energy, which possesses many of the general properties that other forms of energy possess and which must be handled with due consideration of these properties. While he sees matter, viz., coal, oil, gas, etc., being consumed and changed into other products, waste products in some cases and useful products in others, with the simultaneous evolution of heat, he must never forget that the heat, which is being evolved in this manner and which seems to flow out on all sides away from the point at which it was produced, will be dissipated and wasted away unless particular care is taken to conserve and guard it until it has performed its proper function. The proper understanding of the properties of heat energy are absolutely essential to the proper design of apparatus in which it must be used to the best advantage and greatest efficiency.

So ether, that intangible substance, without weight, without color, without mass, forms, odor, taste, in fact, without any properties at all except its ability to form a medium for the transmission of wave motion, is extremely useful in explaining the transmission of heat by radiation.

Heat and the Vacuum Bottle

A vacuum flask has double walls and between these walls there is no air or at most very highly attenuated air, a high vacuum. The removal of the air prevents the rapid transmission of the heat within the bottle—if a hot liquid is placed in it—to the outside air, or the penetration of the comparatively warm outside air into the interior of the bottle, when a cold liquid is stored within it. It must always be remembered that an immutable law of heat is that when two bodies containing heat are at different temperatures, there will be a tendency for the heat in the hotter body to flow to the colder body. The double wall and exhausted air-space retard the movement of the heat, but they do not prevent it altogether. Sooner or later, the hot contents of the bottle cool off or the cold contents warm up.


THE ETHER
VACUUM BOTTLE
NO AIR
HOT LIQUID
Absence of air prevents conduction and convection of heat, but hot liquor cools off due to radiation thru Ether which pervades all substances.
VACUUM
THE ELECTRIC LIGHT
Glass is hot due to radiation of heat from incandescent filament.
The X Ray or (Roentgen Ray) produced by a discharge of electricity through a vacuum - The Electronic Waves are transmitted through the Ether.

The Case of the Incandescent Light

Consider again the incandescent electric light. It is known that the bulb does not contain air, for

otherwise the fine tungsten or carbon filament would be burnt up in the fraction of a moment by the intense heat developed by the current in passing through it. But the outside of the bulb is hot, too hot to hold in the hand. There is heat generated. This we know from the fact that the filament emits such an intense light. We are also aware that this heat is being transmitted from the incandescent filament to the glass bulb and through the glass bulb by conduction. But how does the heat get from the filament to the glass? There is no air in the bulb, so that the heat cannot be transmitted by convection in air currents.

Just another illustration. Electricity is conducted along a wire. This is a familiar way of transmitting this form of energy from place to place. It is understandable that the wire acts like the pipe in a water distribution system or in a gas distribution system it forms the path along which the electrical energy is sent or the water or gas. But what happens when the electricity is discharged into the air? What conducts the extremely weak currents that are employed in radio work? What conducts the electrical current in the case of an X-ray lamp in which there is no air at all?

MEDALS FOR GAS EMPLOYEES

That appropriate recognition may be accorded to employees of gas companies who, by the use of the prone pressure method of resuscitation, save the lives of human beings who become victims of gas asyphxiation, President Thomas N. McCarter, of the Public Service Gas Company, has provided a medal to be awarded through the Accident Prevention Committee of the American Gas Association.

The medal will be of bronze, the size of a silver dollar, with the resuscitation method depicted on one side and the name of the recipient on the other.

Briefly, the method of procedure in awarding a medal is this:

How Medal Will Be Awarded

An application for the award of a medal may be made by an executive official of a company to the Accident Prevention Committee of the American Gas Association. An affidavit, setting forth the complete details of the resuscitation accompanies the application. If the Accident Prevention Committee deems the circumstances justify the award, the case is reported to the executive committee of the association, with a suggestion of the time and place for the award. The Accident Prevention Committee, on receiving the approval of the executive committee, then arranges for Mr. McCarter, or his appointee, to make the presentation.

A certificate, describing the accident and service rendered, will be given to the life saver with the medal, and additional certificates will go to those who assisted. In the event of an employee performing two successful resuscitations, he will be given an engraved bar to be attached to the original medal.

TEMPERATURE CONDITIONS IN COMBUSTION OF GASEOUS AND LIQUID FUELS

Certain chemical reactions which are associated with high temperatures possess great technical importance. Those which are especially interesting to the engineer are the combustion reactions, such as occur in boiler practice, in the internal combustion engine, in the gas producer, and in the oxy-hydrogen and oxy-acetylene flame.

Reactions at high temperatures present certain phenomena which have not received the attention they deserve from engineers. It is not always recognized that the reaction energy, that is, the available work of the reaction, is not generally the exact equivalent of the heat of reaction. Again, at high temperatures a reaction cannot proceed to completion but must halt when the constituents attain a state of equilibrium. The maximum temperature that can be attained is thus definitely limited by the law of chemical equilibrium.

The equilibrium conditions for a chemical reaction have been determined from the laws of thermodynamics, and for the principal dissociation reactions, as $CO_2 = CO + \frac{1}{2} O_2$ and $H_2O = H_2 + \frac{1}{2} O_2$, these conditions are furnished by equilibrium equations which can be established with a fair degree of accuracy. These equilibrium equations, along with an equation connecting the heat of combustion with various energy changes, furnish a system from which the temperature attained at equilibrium may be calculated directly.

It is the purpose of Bulletin No. 139, therefore, to investigate the conditions of equilibrium, to establish the necessary equilibrium equations, and to incorporate these equations into a formulation by means of which the maximum temperature resulting from the combustion of a fuel under predetermined conditions may be calculated.

Copies of Bulletin No. 139 may be obtained without charge by addressing the Engineering Experiment Station, Urbana, Illinois.

As The Journal Views It

THE GAS COMPANY TO THE RESCUE

A great deal has been said about the relation in which the gas company stands to the community that it serves. Opinion on this important matter varies according to which side of the fence the individual happens to be on. The gas customer is apt to view the gas company in an entirely different light than the individual who has some material interest in the affairs of the gas utility. This condition has been rather accentuated in the past, but is being constantly improved, and today there is in most instances but little differences between the gas company and the community in which it is located, as to functions of the former and the way in which they should be and are carried out.

In other words, public relations have improved considerably in the past few years, and are constantly becoming better. This may be due as much to improvement in the manner in which the gas company is conducting its business, and the efforts made to cultivate the customer's friendship as to the fact that customers coming to realize that the gas company is primarily concerned with their welfare. It has been brought out in many instances, and it should be constantly emphasized at all times and occasions when the opportunity offers itself, that the gas company exists for the service of its customers, that its main interest is in their welfare, that it wants them to be satisfied, and that it is constantly seeking better ways in which to improve and augment the service that it renders to the community.

In this connection it is interesting to note that the gas company appears in a rather new light, according to a recent news item which tells of a gas organization in New England which has come to the rescue in an effort to alleviate unemployment in the community. The City Council did not hesitate to call upon the public service corporations, and particularly the gas company, to afford relief for the unemployment situation, and it was at once answered that as far as the gas utility was concerned, the latter was ready to furnish work for as many as seventy-five men, so that some aid could be given the townspeople in their present trouble.

The communication of the gas company, which is printed in part below, is illustrative of the altruistic spirit manifested by the gas utility, as there was no advantage to it in doing the work ahead of time that it had planned for the future.

"It was our intention to accomplish only our usual service installations program during the coming summer, but in view of your request and the existing conditions, we will abandon that policy and adopt the execution of a much more intensive work schedule.

"As soon as the material can be ordered and delivered into the city, and the ground is in a proper workable condition, which will be the latter part of this month, we will open up enough construction work to give employment to approximately seventy-five men.

"We will start the laying of a large amount of gas mains; approximately seven miles can be laid in the system by the above number of men this coming summer and fall."

The role played by the gas utility, as indicated above, may be somewhat new to gas men, and very likely to a great many of the customers of gas companies, but it shows unquestionably that as far as the gas industry is concerned, there is a spirit of cooperation, a spirit of helpfulness, a spirit that leads the gas utility at times to sacrifice its own interests to the better welfare of the community which it serves.

This is an example which may well be quoted and emulated. It is a direct refutation of the argument of the demagogue and the interested politician that the gas utility only exists for the benefit of a few who control it and derive profit from it, and that the only way in which it should be treated is to curb it and hamper it in every possible way. It is a direct answer to the familiar allegation that corporations have no souls, and that gas companies, of all companies, have been particularly soulless.

This is just one of the ways in which the gas company can and does serve its customers and the community in which they live. It goes out of its way to help them in times of trouble and distress. Of course, it will benefit by doing so, and it is rightly

entitled to all the benefits that will be derived from such an action. They should be great, and each and every customer of this gas company should ever be a loyal booster for it.

It was a fine thing for the gas company to do and it is a credit to the community to be served by such a public spirited gas enterprise. Such helpfulness can but result in the best of relations with the public.

THE GAS INDUSTRY TODAY AND ITS PROBLEMS

(Continued from page 457)

communities instead of the state commission. The committee at the hearing was visibly impressed with statements made by financiers that necessary funds would be unobtainable or would cost greatly more in interest and discount under local than under state control. The bill was easily defeated.

A very striking illustration of this point is to be found in editorial comment in the leading paper of one state upon the action of the state commission in materially increasing the rates of a large public utility. "The commission," the paper stated, "has measured up to the expectations of the people of the state. It has cut the thongs that have bound industry to the post."

A New Light on Rate Adjustment

We have all known friendly newspapers to express the opinion after such a decision that no doubt the commission was fully justified in its findings by the evidence that utilities must live and prosper and that the public should gracefully accept the result. I do not, however, recall any other instance in which a newspaper, as this one proceeded to do in the same editorial, expressed itself after this wise:

"The Corporation Commission has done a great day's work for the State of North Carolina. The Observer glories in its foresight, in its wisdom, in its fine sense of the justice in a situation as well as duty to the people and the state."

Why this paean of praise because a commission increased rates? Simply because it meant the utility can now secure the money from those who have it to lend for the extensions and improvements necessary to meet the advancing demands of the times for public service.

The Franchise Problem

Another very definite task for the future is in such revision of laws as will bring about the substitution of indeterminate permits to public utilities in place of the present term franchises. There is no logic nor reason for a time limitation on such permits. The limitation makes it much more difficult to properly finance the activities of the public service companies. Usually higher rates must be paid to get money. Investors will frequently not purchase bonds maturing beyond the expiration of the franchise date, for they cannot always be assured of a renewal on a fair basis. Ultimately this increased expense must be borne by the consumer.

When the time for the expiration of the franchise approaches, a period of turmoil and uncertainty sets in, permeating the entire organization, often injurious to the public service and of no possible value to anybody. Seven states now have laws under which, when franchises expire, or upon voluntary surrender of a franchise by a utility, permits for operation in the public service are issued by the state commission.

Indeterminate Permits

These permits have no time limit and are terminable only for cause after proper hearing or in the event of a sale to a municipality at a fair value, when such municipality must, before operating, secure a certificate of public convenience and necessity from the appropriate state authority. The substitution of indeterminate permits for short-term franchises is an encouragement to develop service at reasonable rates. Such permits encourage investment in utility property and the necessary extension of service to meet our demands.

The Service Charge

The service charge is fairly well recognized as a fair method, and the three-part rate is receiving more and more consideration from our own people and from regulatory bodies. A bill passed in the closing hours of a state legislature a few weeks ago was intended to prohibit the state commission from authorizing or permitting a service charge for gas and electricity. A request was made to the Governor to veto the bill and be accorded a public hearing, as a result of which he returned the measure with his veto. His brief message on this subject showed a clear conception of the situation. The bill originated with a single municipality and the Governor pointed out that the apparent saving to consumers of the amount of the service charge was not real, since the amount of money involved must be replaced by higher rates for gas and electric consumption.

Public Relations

And what shall I say as to public relations? This subject has been discussed and emphasized and rediscussed and re-emphasized until it would seem that not only our executives, but all of the employees of our utilities, must understand that no man in this age may make success for himself in public utility business without a proper appreciation of the attitude he must have toward the people whom he serves and toward officials and the press.

I have heard two striking statements in this connection this year, both from presidents of regional gas associations. One of them said that public relations is not a matter of formula nor of lip service, but is something that must be felt in the mind and heart of the utility man; the other put the case in this way: "If we cannot sell our companies to our own employees, how can we hope to sell them to the public?" Gilt-edged service is essential, but insufficient. Courteous demeanor in the business office and in the homes is vital, but must be accompanied by the sincerest of desires to contribute, so far as lies in the individual's power, his part to the comfort and health and happiness of the age in which he lives.

Catechism of Central Station Gas Engineering in the United States

Installment No. 20

(Continued from last week)

When the bricks are coated, or saturated with carbon, the surface heats rapidly, because the carbon burns, and the gas maker is deceived by the glowing carbon and believes the bricks to be hotter than they are. It is possible to tell something of the condition of the checker-bricks by observation through the sight cocks provided for the purpose. Other indications of dirty bricks are a falling off in the rate of make per minute and in the oil results. If all the conditions of operating remain unchanged, and the candle power falls materially and stays down and the make of gas per minute of run is reduced, the checker-bricks should be at once examined and, if dirty, cleaned and removed. Bricks should not be allowed to become so fouled as to make a material reduction in the rate of make. Experience soon teaches an intelligent gas maker to avoid both the extreme of reduced results and of too frequent cleaning.

Changing the Checker Brick

It is the custom in many works, especially those that are provided with a spare set of apparatus, to change the checker-brick at regular intervals, these intervals being measured in some cases by the number of days that the set has been in operation, and in others by the number of hours of work actually done. The object of changing the bricks at fixed intervals in this way is to avoid the irregularities in make and working results that arise from running until it is absolutely necessary to make the change, it being thought that the loss due to a day or two of poor working is greater than the slight extra cost involved in cleaning the bricks a little oftener.

In a works that has only one set of apparatus, the bricks should be put in good shape as late as possible in the fall, so that they will be in good condition during the heavy make of December and January.

Cleaning the Wash Box of a Carburetted Water Gas Apparatus

107. Describe the cleaning of the washbox of a carbureted water-gas apparatus, including the precautions to be observed to prevent the occurrence of any accident.

Ans. There are two arrangements of washbox in water-gas apparatus. In one the take-off from the wash-box is on top, and in the other it is on the side and connects directly with the scrubber.

The connection from the gas outlet on top of the superheater to the washbox varies in different forms of water-gas apparatus. In most cases there is a lid on top of what is known as the oil heater connection, which can be opened to clean the oil heater.

When no oil heater is used, the take-off connection from the superheater has a handhole cross at the top of the superheater, connecting the vertical riser from the washbox to the outlet branch on the superheater.

When the washbox has a take-off on top, there is a valve between the washbox and the scrubber which can be closed, and will thus shut off communication between the washbox and the scrubber. In this case, first open either the lid on top of the oil heater, or, in case there is no oil heater, the handhole on the cross; then shut off the overflow from the washbox to the seal pot, open the handhole on top of the washbox and fill the washbox with water. When the washbox has been filled, draw off the water, open the handhole or manhole on the side of washbox and remove the tar, etc.

Precaution Against Accidents

In case the washbox is joined to the scrubber by a side outlet, and there is no valve between them, the gas valve at the outlet of the scrubber must be closed. The stop cock on the overflow pipe from the scrubber must now be shut and the manholes on the scrubber opened, beginning with the one on top and working downward. The openings on the take-off pipe from the superheater to the washbox and the handhole on top of the latter must also be opened up, and the washbox filled with water until this rises into the standpipe above the top of the box. This, of course, involves filling the scrubber also to an equal height. Before emptying the washbox the standpipe should be thoroughly cleaned of all carbon and tar to remove all danger of its catching fire and igniting any gas that might work back from the scrubber when the water is run out. If any of the carbon should happen to be on fire when it is scraped down it will be extinguished by falling into the water, and before the water is drawn off care must be taken to see that none remains unextinguished. After the standpipe has been cleaned it should be plugged, just below the connection to the superheater, with either a bag of wet sawdust or a board cut to fit it fairly tight and plastered around the edge with fire clay to close all cracks. The object of this plugging is to prevent any gas that may work back from the scrubber from being ignited at the top of the superheater. The water can now be run off the washbox and scrubber and the washbox opened and cleaned.

Reason for Differences Between Methods

The differences between the two methods are called for by the necessity of seeing that the scrubber is thoroughly ventilated when it cannot be shut off,

and of taking precautions to prevent the ignition of any gas that may still remain in the scrubber in spite of the ventilation given it. In any case the washbox and its connections must be thoroughly ventilated, and it should be provided that no fire comes near the washbox or its connections, or the scrubber, while they are open, and that no light is used about the work.

Result of Obstruction in Pipe—Taking Gas from Condenser of Water Gas Set

108. The dip pipe on the take-off from the superheater into the washbox of a double superheater carburetted water-gas apparatus has an internal diameter of 10 in. and an external diameter of 11¼ in. and has a seal of 2 in. The internal diameter of the washbox is 4 ft. 0 in. The drain pipes from the scrubber and condenser are carried down below the surface of the liquor in the seal pot to a depth of 3 ft. 9 in. Two sets are in operation. An obstruction occurs in the pipe taking the gas from the condensers while one set is making gas and the other is under blast. Will the gas show first at the scrubber and condenser seals or at the top of the superheater of the latter set? Give the reasoning and calculations by which your answer is reached.

Ans. The gas will show first at the opening through which it can pass with the least resistance, and it is therefore necessary to determine the resistance offered by the washbox to the backward passage of gas and compare it with that offered by the depth of seal on the drain pipes.

The Calculation

Before any gas can pass backward through the washbox, the level of the water in the portion outside of the dip pipe must be depressed below the edge of this pipe, the water displaced being forced into the dip pipe. The pressure required to depress the level outside and raise that inside will be equal to the height, above the lower edge of the dip pipe, to which the water will have risen in the dip and take-off pipe when the outside level is just even with this edge. This height will be equal to the height at which the water, on the inside, stands above the edge when the pressures are equal inside and out, plus the quotient obtained by dividing by the area of the pipe the volume of water that has to be forced from the outside to the inside. The above volume of water is equal to the area of the space in the washbox outside the dip pipe multiplied by the depth of the seal.

In the case given, as the diameter of the washbox is 4 ft. 0 in. or 48 in., and its area is 1809.6 square inches, while the outside diameter of the dip pipe is 11¼ in. and its area is 99.4 square inches, the area of the space outside the pipe is $1809.6 - 99.4 = 1710.2$ square inches. The depth of seal is 2 in. and therefore the volume of water to be displaced is $1710.2 \times 2 = 3420.4$ cubic inches. The internal diameter of the dip pipe is 10 in. and the internal area 78.54 square inches, hence the displaced water will fill the dip pipe to a height of $\frac{3420.4}{78.54} = 43.5$ in. The dip pipe being sealed to a depth of 2 in., the water will stand in it to that height when the pressures inside and outside are equal, and, therefore, the total height to which the water will have to be raised on the inside, before the bottom edge of the pipe will be left uncovered on the outside, will be $43.5 + 2 = 45.5$ in.

Since the drain pipes from the condenser and scrubber are sealed to a depth of 3 ft. 9 in., or 45 in. only, gas will escape through them before it shows at the top of the superheater, and will escape through the latter opening only in case the blowing of the seal on the drain pipes does not afford sufficient relief to keep the pressure down to 45 in.

Efficient Method of Removing Tar Vapors

109. In the manufacture of carburetted water-gas it is found that with the use of ordinary methods of condensing and tar extracting some vapors remain in the gas until the purifiers are reached, and are then deposited in the purifying material, with the effect of shortening its life. What has been found to be an efficient way of removing these vapors before the purifiers are reached?

Use of Planer Chips

Ans. The method which has been finally settled upon, after much experiment, as being the most efficient in removing those vapors which still remain in carburetted water-gas after it has passed through the ordinary condensing and scrubbing apparatus, but which if not removed would be absorbed by and clog the purifying material, is to pass the gas through a layer, or layers, of planer chips before it comes in contact with the purifying material. This may be done in the simplest manner by putting a layer of the chips on the lower tier of trays in each purifying box, so that when a box becomes the first in the series the gas passes through this layer of chips and the vapors are strained out before purifying material is reached. But this method, though simple, is more expensive in operation and not as efficient as the one adopted at several works where the planer chips are used in deep layers in separate vessels of the same form as the ordinary tower scrubber, which may be called shaving scrubbers. When used in this way the chips can be changed at just the proper time as determined by their complete saturation and failure to arrest the vapors, while when used as a lower layer in the purifying box the changes are determined by the fouling of the purifying material, irrespective of the condition of the chips which may be called upon for more work than they are equal to, or, on the other hand, may have to be taken out of action before being completely saturated, thus mak-

ing the action irregular, while at the same time the expense of handling into and out of the boxes is greater than it would be in the case of separate vessels.

A discussion of the subject, which should be read by the students, will be found in the Proceedings of the American Gas Light Association, Vol. XV., pages 142 to 147, and a paper describing the experiments made at one large works, and giving the details of the scrubbers used at that works, will be found in Vol. XVII of the same Proceedings, at page 207.

Since the reading of this paper further experiments have been made with modified forms of the P. and A. condenser, and one in which the drum is made of nine concentric cylinders formed from perforated sheets, with holes ⅛ in. in diameter, has been found to remove all the tar and oil that cause trouble in the purifiers. The condenser is placed between the relief holder and the purifier, and is worked under a differential pressure of about 6 in. to 9 in.

Use of Relief Holder in Water Gas Manufacture

110. Explain the use of the relief holder in water gas manufacture.

Ans. "Water gas, as made by the Lowe, or cupola process, is not generated continuously. It is important that the gas should be purified and measured in a continuous flow. The relief holder receives the gas as made from the apparatus, and thus acts as a governor, permitting a continuous flow through the purifying and measuring apparatus, in spite of the intermittent process of generating. It also acts as an equalizer of the gas, which will vary slightly from one period of the run to another."

Impurities

See answer to question No. 63 for qualitative tests for tar and sulphuretted hydrogen.

Methods for Venting Storage Tanks

111. Describe two methods employed for "venting" oil storage tanks so as to permit the escape, when the tanks are being filled with oil, of the vapor that has accumulated in them and to prevent the formation of a vacuum while the oil is being pumped out, and state their respective advantages and disadvantages.

Ans. One method for venting oil storage tanks at gas works is to connect the vent pipe either to the gas-holder inlet or outlet, or to some part of the pipe system around the works, such as the foul main.

Another method is to have either a single vent pipe, which branches into two outlets opening into the air, or else to have two vent pipes, and to place a pressure relief valve on one outlet and a vacuum relief valve on the other outlet, being careful to keep the open ends of each pipe covered with brass wire gauze of not less than say 2,500 meshes to the square inch.

Advantage of First Method

The great advantage of the first method is that it entirely prevents the formation of an explosive mixture of air and oil vapor in the top of the tank, since as oil is withdrawn from the tank its place is taken by gas from the holder or pipe system. The disadvantage, which is greatest when naphtha is used and stored in an uncovered tank exposed to the sun's rays, and when the vent pipe is connected directly to the holder outlet or to a pipe to which consumers' services are also connected, is that at times, when the tank is being filled with oil and when the weather is hot, an excessive amount of vapor passes over into the gas being supplied through this pipe and causes it to smoke badly when consumed. This disadvantage is of smaller importance when the tank is roofed over or covered with water, and when heavy oil is used and the vent pipe can be connected into the foul main it practically disappears, and under these circumstances this method of venting is the best possible one.

Advantage of Second Method

The second method obviates any such interference with the regulation of the quality of the gas as may result, as stated above, from the first method, but has the great disadvantage of permitting the formation of a mixture of air and oil vapor in the top of the tank, which mixture may be fired and cause more or less damage. It is, however, thought by some good authorities to be preferable to the first method when naphtha is used and stored in tanks exposed to the sun, owing to the trouble experienced under these conditions from the tendency of the vapor-laden gas to smoke. The caps of fine wire gauze placed over the vent pipes should prevent any flame from striking back into the tank, even in case the vapor escaping from the pipes should be accidentally fired. Of course, in normal working no naked light should ever be allowed near an oil tank under any circumstances.

Protecting Oil Storage Tanks Against Fire

112. What precautions should be taken to protect oil storage tanks from fire, and to prevent the oil from spreading over surrounding territory in event of fire?

Ans. "To protect oil storage tanks from fire, they should be erected as far as convenient from any possible source of fire. They should not be surrounded by combustible material. As a further protection, the top of the tank may be made, as is often the practice, in the form of a pan, which can be kept full of water, protecting the tank from sparks, and keeping the oil cooler than it would be if the sun were allowed to shine directly on the metal. Tanks may be erected in fire-proof buildings, and however erected and of whatever material, they should be, for the protection of surrounding property, encircled

with a sufficiently heavy wall of earth or masonry to prevent the escape of the oil, in case a rupture of the metal of the tank should occur."

Pipe Cement in Oil Pipe Joints

113. What material would you put on the threads or on the faces of flanges when making up the joints in pipe lines to be used for crude oil, naphtha or gas oil?

Ans. The superintendent of a large carburetted water-gas plant gives the following answer as the result of experience in running and maintaining oil lines at the works under his charge.

"Use common brown soap on the threads of pipe lines to be used for crude oil, naphtha or gas oil, first making sure that the threads are clean and full depth and that the oil used in cutting these threads is burnt, or otherwise thoroughly cleaned off, before applying the soap. For the faces of flanges use a close-grained, fibrous cardboard for the small sizes, and either cardboard or a metallic gasket for the larger sizes—the latter preferred. The cardboard should not be more than 1/16 of an inch thick for any size of flange, and if a metallic gasket is used, it is best made of an outer ring of copper and an inner ring of lead."

Thick shellac varnish is also used on pipe threads for oil lines and works well on lines carrying cold naphtha. Litharge mixed with glycerine is also used, but this becomes too brittle as it hardens to make a good job.

The one thing to be avoided is the use of any material mixed with linseed oil, since the petroleum oil rapidly attacks any such material, and joints made with it soon leak.

Calculation of Contents of Cylindrical Tank

114. A cylindrical oil tank of the "cheese-box" type is 22 ft. 6 in. in diameter and 16 ft. 0 in. high. How many gallons of oil will it hold for each inch and each foot of its height, and what will be its total contents when full?

Ans. The area of a circle 22 ft. 6 in. or 270 in. in diameter is, as obtained from the tables of circumferences and areas of circles, 57,256 sq. in., and therefore the tank will contain a volume of 57,256 cu. in. for each inch of its height. An American gallon has a volume of 231 cu. in. $57{,}256 \div 231 = 247.86 +$ or each inch in height of the tank will contain 247.86 gallons of oil.

Each foot in height will contain $247.86 \times 12 = 2974.32$ gallons, and the total contents of the tank when full will be $2974.32 \times 16 = 47{,}589$ gallons.

Using the contents per inch and per foot, determined as above, a table should be prepared for each oil tank at a gas works, showing the total contents for any height to which it is filled with oil from 1 in. to the full height.

Calculation of Contents of Horizontal Tanks

115. A cylindrical oil tank, placed with its axis horizontal, is 4 ft. 0 in. in diameter and 20 ft. 0 in. long. How would you determine the amount of oil it holds for every inch in depth of the oil from 1 in. to 48 in.?

Ans. The simplest method of determining the amount of oil contained in a cylindrical oil tank set with its axis horizontal, when the tank is filled to certain levels, is a graphical one. On a piece of paper spread on a drawing-board or a smooth floor, draw a semicircle with a radius equal to that of the tank Draw a line passing through the center and stopping at each end at the circumference, or, in other words, draw a diameter of the circle. Then draw lines parallel to this diameter and 1 in. apart until the whole semicircle has been divided into strips 1 in. wide. The area is now divided into a number of quadrilaterals which are practically trapezoids, since the portion of the circumference included between adjacent lines is practically a straight line, with a segment of the circle at the bottom. An isosceles triangle, equivalent in area to this segment, can be formed by erecting a perpendicular at the middle point of the lowest one of the parallel lines, and, from a point on this perpendicular a little outside of the circumference of the circle, drawing a line on each side down to the base at the proper inclinaton to make it cut the circumference of the circle at such a point that the area included between the line, the circumference and the perpendicular and lying outside of the circumference, is equal to the area included between the line, the circumference and the lowest of the parallel lines and lying inside of the circumference. A very close equality between these areas can be secured by eye after one or two trials. If the tank is a small one and the curvature of the circumference sharp, it may be necessary to draw the parallel lines only ½ in. apart in order not to have the portion of the circumference between two adjacent lines deviate too much from a straight line and in the present case it is necessary to do this for the lower 10 in. of the semicircle, the whole being thus divided into fourteen 1 in. strips, nineteen ½ in. strips and a segment having a height of ½ in.

The semicircle having been divided up in this way the calculations are very simple. Starting with the triangle measure, the lengths of its base and its altitude in inches and multiply the base by one-half the altitude. The product is the area of the triangle in square inches. Multiply this by the length of the tank in inches and the product is the volume in cubic inches of the space enclosed between the bottom of the tank and a plane parallel to the axis of the cylinder and passing through a horizontal line drawn 1 in. above the lowest point in the circumference. Divide this volume by 231 (the number of cubic inches in a gallon) and the quotient is the number of gallons in the tank when the liquid in it is 1 in. high.

(Twenty-first Installment Next Week)

HANDLING COMPLAINTS

(Continued from page 456)

use of gas, and, therefore, a larger bill than usual. Sometimes an examination of the customer's account will indicate that a mistake in meter reading caused the complaint.

Procedure in Handling Them

Our usual procedure in a high bill complaint is first to make a transcript of the customer's account (form B); then to have the meter re-read, using form C. (This form is also used for special readings requested by the customer). If no basis for adjustment is found, and the customer is still dissatisfied, then the meter is tested (form D). In the case of gas complaints, our gas appliance adjusters look over the appliances to see whether the appliances are in good adjustment.

It should be mentioned at this time that prior to December 15, 1922, we distributed natural gas only. Since that time we have distributed mixed water gas and natural gas, of 537 B.t.u. Some customers still have inefficient appliances, such as old burners, old style room heaters; and some still have the wasteful natural gas ways of using gas. The result is, we have quite a number of gas high-bill complaints in the winter season.

In all cases, we are able to show the customer that we have gone the limit in re-reading or testing meters, investigating, adjusting appliances, etc. Where an incorrect reading, or meter registering fast, is found, we adjust the bill. The customer is always promptly notified of the results of our investigation, using form E.

Trouble Reported Direct to Dispatcher's Office

As mentioned above, trouble calls, and complaints other than concerning bills, are reported to the dispatcher's office.

Gas and electric trouble men, linemen, and meter setters, report to the dispatcher's office at frequent intervals by telephone and in person. All troubles such as wires down, poles down, street lights out, no gas, gas leaks, etc., are received in the dispatcher's office and there transmitted to the proper trouble man. In emergencies a man can be sent out in a very few minutes after a serious trouble call is received. It is, of course, important to promptly restore service to large customers in case of interruptions.

Handling the Reports

All complaints and reports sent in by employees on form A go to the dispatcher's office. Here the necessary action is taken to investigate complaints or get the required information. Where the help of other departments is required, a special order, form F, is used. This is made in duplicate, the copy being kept with the trouble report in a work-in-progress file. Unfinished business in the work-in-progress file is followed up until the trouble report can be answered and sent back to the originating employee and the case closed.

The service department and the dispatcher's office are within a few feet of each other in our general office. This makes inter-communication and co-operation easy.

The dispatcher's office (which is in effect the office of the gas and electric meter department) writes all orders for setting, removing, changing and testing meters. Therefore, inquiries and complaints regarding meter installations or removals can be attended to readily.

Employee Reporting Complaint Follows It Up

One of the things we consider particularly important in handlng complaints is that, whenever possible, the first employee receiving a complaint should take it and then consider himself the customer's representative and see that the complaint gets to the proper department.

If a meter setter goes into a house, and the customer complains of something or asks for information, the meter setter does not say, "I don't know," or "You will have to call the office." He writes down in his book (form A) the complaint or request for information. When he returns to the meter shop or to the general office, he turns in the trouble report.

Similarly, if a telephone call happens to get to the wrong department (sometimes it is extremely difficult for our telephone operators to find out what a customer wishes to talk about) the employee answering does not say, "You've got the wrong department, call so-and-so," and bangs the receiver. Instead, the employee takes the call and then transmits it himself to the proper department.

Conclusion

To sum up, in the matter of complaints, we consider it important:

(a) To anticipate or eliminate causes for complaint.
(b) To make it easy for the customer to complain.
(c) To investigate complaints promptly and improve our service when required.
(d) To have each employee who deals with the public consider himself responsible for proper attention to complaints he received, and
(e) To inform the customer of results of investigating complaints.

FIRST SALES BULLETIN ISSUED BY A. G. A.

The first sales bulletin of the A. G. A. contains the following:

1. Plan of the May-June Campaign for Gas Water Heating.
2. Talking Points That Really Sell a Gas Range.
3. Organizing to Sell More Industrial Gas.
4. Home Service Development.

GAS MERCHANDISING

Domestic – Industrial

Raising the Sales Valleys

Everlastingly exploiting evens up the sales curve by raising the valleys

William H. Matlack

THE Laclede Gas Light Company, St. Louis, under the direction of J. J. Burns, manager of the commercial department, has adopted a merchandising plan that is worthy of special attention by those who desire to raise their sales curve and at the same time take the valleys out of it, and even up their send-out curve.

This company has long been a leader in the field of merchandising and sales engineering as applied to gas service and gas appliances.

The course pursued, viz., to educate the public to the value of gas for fuel, to introduce and emphasize the value of the different appliances and their application in the solution of the many problems and tasks of human existence, to furnish users of gas service with accurate information regarding the comparative merits of the different appliances, to protect customers against the purchase of inefficient and unsatisfactory appliances, to render real service promptly on all appliances regardless of where they were purchased, to advertise continuously and consistently, to foster favorable public opinion, has all been carefully and thoughtfully planned.

Sales Engineering

The company devotes the same care and thought to its merchandising problems as it does to those which are strictly technical, such as manufacture, transmission and distribution, for it has long realized that a merchandising policy and plan must be formulated that would develop the domestic and industrial field properly, thoroughly and convert wasted potentialities into profitable realities.

Along in July and August each year Mr. Burns begins to lay out preliminary plans for the merchandising department for the following year. The year's schedule calls for a different and definite "set-up" each month, gas range sales, water heater sales, etc., etc., planned months in advance. This is the usual procedure. Under certain conditions the advertising schedule is pushed ahead, so to speak, and in July and August copy is prepared for the various direct-by-mail as well as newspaper advertising featuring gas heating appliances. This "out-of-season selling" was carried on to ease up the rush that the company has experienced at the first drop in temperature. That is one reason. The other is that Mr. Burns is convinced that gas appliance and gas service could be merchandised on a continuous basis the year round, that there was no good reason why the sales curve could not be straightened out, not by working on a seasonal sales basis, but by working on the basis of selling each and every customer enough gas appliance to make him a profitable customer.

Aggressive Out-of-Season Selling

The "out-of-season selling" was carried on as aggressively as the seasonal; there was no division of effort, with the result that the sales curve of this company has had a very pleasing appearance. Not

only has business held up and exceeded the quota estimated, but it has been secured in a constant, continuous stream. The sales department and the installation and service departments have worked full time, with no "rush" or "lull" periods.

Pushing Business with a Laugh

ALL the readers of this paper know old "Hook 'er to the Biler," as his many friends call Wm. H. Ridgway, president of the Craig Ridgway & Son Co., of Coatesville, Penn. Mr. Ridgway has lately been putting his advertisements in jingling rhymes. The first of these consisted of a couple of verses referring to the personnel of the Ridgway Company. These lines inspired Mr. Robert C. Hopkins, of the Alliance Brass and Bronze Company, Alliance, Ohio, to come back at him with a parody on the "Old Oaken Bucket." The water out of the "old oaken bucket" poured into Mr. Ridgway's old pump brought forth the limpid stream which is found below. These lines are all so out of the ordinary that they have been lifted from the advertising pages in order that all our readers may enjoy them.

The Ridgways

We're a little bunch of brothers
  Of good old Quaker stock,
Three "big boys" of our mother's
  Named "Ellis," "Bill" and "Doc."
And we have a little work shop
  With a lot of skillful hands,
Where we "HOOK 'ER TO THE BILER"
  For the chap who understands.

Yes, we make them by the hundreds
  And we place them everywheres,
Since we give the folks perfection
  For getting stuff upstairs.
Now the man who has a boiler
  And a plant he wants to "Go,"
Can just "HOOK 'ER TO THE BILER"
  And be sure to make the "Dough."

Buckeye Bob

Hello, old Buckeye Hopkins Boy,
  Come, shake; how do you do?
I'm orful glad to meet a Bird
  Who likes to sing it, too.
Them lines o' yourn are hard to beat,
  You're no apprentice hand;
That shop you paint in them few lines
  Is found o'er all the land.

But do you know, good Buckeye Bob,
  Some folks would have more fun
If in their trade they'd laff sometimes
  And sing, as we have done.
They buckle down to pile it up,
  Then die before their time—
The surest cure for worn-out nerves
  Is just to laugh and rhyme.

And so, old chap, let's you and me
  Sing on from day to day,
While poundin' sand and pourin' brass,
  An' makin' bus'ness pay.
It's lots o' fun to make and sell,
  But lots more fun to sing
And pour the milk of kindness out
  On folks and everything.

For, after all is said and done,
  One thing is very clear:
To get ready for Up There,
  God's coachin' us Down Here;
So put Him first in bus'ness Bob,
  You'll prosper if you will,
And laff and sing and happy be
  Like
    "Ellis, Doc and Bill."

The Famous Old Hook 'Er

(Air: The Old Oaken Bucket)
Robert C. Hopkins

How dear to my heart is the big, busy factory,
  When fond recollection presents it to view;
The inquiries, orders and markets refractory,
  And every loved shekel for equipment we blew.
The foundry, machine shop, the erecting room nigh it,
  The cupola grimy that melts to its fill;
The big, heavy casting, the mill that stands by it,
  And e'en the Old Ridgway that works with a will.
The hydraulic Ridgway, the handy old Ridgway,
  The smooth running Ridgway, that product of skill.

The big elevator I hailed as a treasure,
  For often rush jobs made us gather up speed;
I found it the source of exquisite pleasure,
  E'er delivery dates met the customers' need.
How ardent I seized it with hands that were glowing,
  When quick it arose with its burden of steel;
Then soon all were busy, tote-boxes o'erflowing,
  And always "Old Hook 'er" right there in the deal;
The sturdy "Old Hook 'er," the steady "Old Hook 'er,"
  The "Biler" and all running "Slick" as an eel.

How neatly we planned many years to retain it,
  As daily it labored at hoisting and dip;
Not a full blushing vamp could tempt me to leave it,
  Though shapely as Venus from ankle to lip.
And, now far removed, where no tangles unravel,
  The tears of regret intrusively fill,
As fancy reverts to the day we could travel
  All hooked to the "Biler" back there in the mill;
The famous "Old Hook 'er," the ready "Old Hook 'er,"
  Built sturdy and strong by Doc, Ellis and Bill.

Standardizing Cast Iron Pipe

A conference to be held in New York

THIS conference is called by the American Engineering Standards Committee, in accordance with the recommendation of a special committee containing representatives of the organizations chiefly concerned with the subject. That committee was organized to consider the requests of the American Gas Association and American Society for Testing Materials for the approval, by the American Engineering Standards Committee, of their respective specifications for cast iron pipe and special castings.

The Program

The following agenda are based upon discussion and correspondence during extended consideration of the subject by the A. E. S. C. and co-operating organizations:

1. Election of chairman of the conference.
2. Resume of present American and foreign practice in specifications for cast iron and related types of pipe and fittings, by W. G. Hammerstrom.
3. Shall the unification of specifications for cast iron pipe be undertaken?
4. If so, shall the unified specifications cover:
   (a) Materials?
   (b) Methods of manufacture?
   (c) Dimensions?
   (d) Pressure ratings? (Possibly with the provision of one system of pressure ratings that might extend through the whole system of pipes of different materials and for different mediums?)
   (e) Methods of installing pipe and making up joints?
5. Should there be specifications for standards prepared for the following, and other items not now covered by existing specifications:
   (a) Flanged pipe?
   (b) Flanged and bell mouth fittings and wall castings?
   (c) Pipe elbows, tees, Y's, return bends, and other fittings not now included in standard lists?
   (d) Cast iron pipe threaded for flanges or couplings?
6. Are there any new developments, such as centrifugal castings of pipe, which should be given special consideration in the development of standards?
7. Does the conference wish to offer recommendations to any continuing or sectional committee that may be set up, as for example:
   (a) Can certain existing sizes and varieties of pipe and special castings be eliminated, such as:
      1. Single sweep and twin elbows—the radius of standard tees to be increased to gain the same end—with the introduction of 30 deg. and 60 deg. ells?
      2. 45 deg. and 22½ deg. ells?
      3. Some item of A. W. W. A., N. E. W. W. A. and A. G. A. specifications which do not differ greatly?
      4. Present pressure ranges or so-called weight classes decreased in number, or the intervals between classes increased? Some of the present weight classes are now so close together that under the tolerances the maximum of one class can overlap the minimum of the next.
   (b) Shall special attention be directed to some of those questions which will further the use of cast iron pipe in export trade, such as taking up in an early stage of the work the study of a completely co-ordinated scheme of metallic pipe and fittings applicable to all common mediums (air, gas, water, steam, oil, etc.) along the lines that are being followed in the Continental work of Switzerland, Germany, Austria, Holland, Belgium and Italy?
   (c) Should special provision be made for international co-operation in standardization work in this field—especially with Canada, where the opinion has been expressed that American and Canadian standards should be alike, if this is possible?
8. Appointment of special committee to consider sponsorship and scope.

PUBLIC UTILITIES LEAD ALL OTHER INDUSTRIES IN NEW FINANCING

The public utility industry of the United States is leading every other business in the country in the amount of new money secured for extensions, improvements and additions to plant and service facilities, official figures reflecting a growth unprecedented in the annals of the industry.

For the three months ended March 31, 1924, according to Commercial and Financial Chronicle, the public utility industry (gas, electric, street railway, water, telephone and telegraph companies) secured through the financing of bonds, notes and stocks, $295,415,450, which was $137,000,000 more than the railroads secured, $178,000,000 more than industrial and manufacturing plants secured, and more than double the amount obtained by the iron, steel, coal, copper, motor, oil, equipment, rubber and shipping industries combined.

GAS SALES ASSOCIATION OF N. E. HOLDS ANNUAL MEETING

(Continued from page 458)

Report of Nominating Committee

The nominating committee presented the following slate for election for the year 1924-1925:

For governor—John J. Quinn of Quincy.

Board of managers—Charles Otten, Jr., manager of the Plymouth Gas Light Company; William R. Bell, sales manager of the Haverhill Gas Light Co.; George Fisher, General Gas Light Co.

The association instructed the secretary-treasurer to cast one ballot and the above men were elected as nominated by the committee.

The newly-elected governor was called upon to say a few words. He said in part:

"It has been a pleasure to be associated with you and it will also be a pleasure to try and preside in the same manner that Governor Woodhead has done.

New Governor Makes Few Remarks

"Five years ago I came to this section of New England and I came up here as a member of this association. This association has certainly grown and it has become a tremendous influence and a great credit to the industry. With your help and your interest the thing will go on. I will do all I can to continue with the good work."

The members elected to the board of managers expressed their appreciation for being elected to the board and also their desire to be of help to the association in any way possible.

Report of Advertising Committee

The committee has had several meetings and it has come to the conclusion that this subject is a great deal bigger and more far reaching than any one had any idea. The committee recommended that they be enlarged and that this committee work with the board of managers of the association and become active during the months that this association will hold no meetings.

Mr. J. C. Aaron, chairman of the committee, stated that this subject covers such a broad field that a great deal of this work should be done now. This committee would like to be empowered to spend some money.

Investigations prove that this is a great field for co-operative advertising and to educate the people in the matter of gas.

To bring out his point, Mr. J. C. Aaron quoted an editorial from one of the leading Boston newspapers:

> "The world is moving up and out of the mists, and the mind of man is gradually thawing in the sunlight. Public utility executives are learning that the exercise of helpful and constructive service is both more profitable and more enjoyable than practicing any of the subtle arts of defense that they considered so necessary for so long. But a little while and all the rusty armor of the era of strife will have been laid away, and the industry will discover how much easier it is to serve and grow when the mind is free to think in the service of humanity.
>
> "The world has long believed that the Golden Rule is a fine thing, but has always doubted that it was more than a Sunday-go-to-meeting garment. It is indeed interesting to find that the public utilities are finding it otherwise, and that it not only brings joy to him who practices it, but income as well."

Governor Woodhead stated that according to the constitution and by-laws he had the authority to enlarge the committee and would do so and give them authority to go ahead and work out some plans on this co-operative advertising.

Co-ordination Committee

This committee is ready to co-operate with similar committees from other organizations, but have not as yet been called upon to confer with other committees. The committee has met and will be ready to do its part when called upon.

The entertainment for the evening was furnished by Mr. L. A. W. Merrihew, a member of the association, who rendered some very fine solos, and the Belmont Trio from the Boston Consolidated Gas Company. The trio furnished some of the very latest songs, to the great pleasure of the members present.

The speaker of the evening was Mr. W. H. McMasters, who was introduced as a man who would dispel any grouches we may be slaves to. His "Humorous Talk on Current Events" kept the members in uproar continually. The stories he related to illustrate his points certainly dispelled the grouches that any one would have and brought laughter instead.

After the meeting several members of the association expressed the opinion that the year 1923-1924 was the best the Gas Sales Association ever had and all are looking forward to the coming year, when it is expected that the Gas Sales Association will establish a record in the gas industry.

WORLD POWER CONFERENCE

The World Power Conference, to be held in Wembley, England, June 30 to July 12, 1924, will include the following papers of interest to gas men:

Illumination by Gas, Dr. J. S. G. Thomas and Dean Chandler.

Industrial Use of Gas, Sir Arthur Duckham.

Coke as Fuel for Steam Raising, E. W. L. Nichol.

Fuel Conservation and Smoke Abatement, F. W. Goodenough.

Science in the Gas Industry, Present, Past and Future, Professor J. W. Cobb.

The Present Position and Future Prospects of the Gas-Making Industry, D. Milne Watson.

Future Use and Application of Gas Engines (coal gas) in the Use of Power, Professor F. W. Burstall.

The Co-ordination of the Use of Fuel, E. W. Smith.

The By-Products of Coal Distillation in Relation to Power Production, W. G. Adam.

Current Market Prices

COALS (By Courtesy of Coal Age)

A. Bituminous.

(Spot prices, F. O. B., mines, net tons).

High Volatile, Eastern	Market	Price
Pool 54-64 (Gas Standard)	New York	$1.40 to $1.65
Pittsburgh screened gas	Pittsburgh	2.30 to 2.50
Pittsburgh gas, mine run	Pittsburgh	2.00 to 2.25
Kanawha lump	Columbus	(*)
Kanawha mine run	Columbus	(*)
West Virginia lump	Cincinnati	2.10 to 2.25
W. Virginia gas mine run	Cincinnati	1.35 to 1.50
Midwest		
Indiana 4th vein lump	Chicago	2.75 to 3.00
Indiana 4th vein mine run	Chicago	2.25 to 2.50
South and Southwest		
Big Seam lump	Birmingham	2.70 to 2.90
Big Seam mine run	Birmingham	1.75 to 2.25
Southeast Kentucky lump	Louisville	2.00 to 2.35
Southeast Kentucky mine run	Louisville	1.25 to 1.75

B. Anthracite.

(Spot prices F. O. B. mines, gross tons),

	Market	Freight rates	Independent	Company
Egg	New York	$2.34	$8.75 to $9.25	$8.35 to $8.75
Egg	Philadelphia	2.39	8.35 to 9.50	8.70 to 8.75
Egg	Chicago (net tons)	5.06	7.68 to 7.77	7.73 to 7.81

COKE (By Courtesy of Iron Trade Review).

Connellsville, furnace	$3.25 to $3.75
Wise County, furnace	4.00 to 4.50
Alabama, furnace	5.00 to 6.00
Foundry, Newark, N. J., del	10.41
Foundry, Chicago, ovens	12.50
Foundry, Boston, delivered	12.50
Foundry, St. Louis	12.50
Foundry, Granite City, Ill	12.50
Foundry, Alabama	6.00 to 6.50

PETROLEUM (By Courtesy of Oil, Paint & Drug Reporter)

(Prices at wells, per bbl.)

Pennsylvania—Ohio—West Virginia.	
Cabell, West Virginia	$2.20
Corning, Ohio	2.15
Lima	2.28
Pennsylvania	4.00 to 4.50
Wooster, Ohio	2.15
Indiana—Illinois.	
Illinois	2.07
Indiana	2.08
Oklahoma—Kansas.	
Healdton	.90
Mid-continent (low gravity)	1.25

* No quotation, due to strike.

Gulf Coast.

Gulf Coast, Grade A	$2.00
Gulf Coast, Grade B	1.70

GAS OILS.

Gas Oil, Bayonne, bulk gal	5½ to 6½c
Gas Oil (32-36) Illinois-Indiana,	5.38 to 5.63
Gas Oil (32-36) Oklahoma, gal.	2⅞ to 3 c
Gas Oil (32-36) Gulf Coast, gal	5 to 5½c

PIPE AND FITTINGS—CAST IRON GAS PIPE.

(By Courtesy Iron Trade Review.)

Four-inch, Chicago	$64.20 to $65.20
Six-inch and over, Chicago	60.20 to 61.20
Four-inch, Birmingham	57.00 to 58.00
Six-inch and over, Birmingham	53.00 to 54.00
Four-inch, New York	70.60 to 71.60
Six-inch and over, New York	65.60 to 66.60
Standard fittings, Birmingham, base	115.00

6 to 24-inch, base; over 24-inch, plus $20; 4-inch, plus $20; 3-inch, plus $20.

BY-PRODUCTS

(By Courtesy of Oil, Paint and Drug Reporter)

Ammonia aqua, 16 deg. drums lb	5 to 5¼c
Ammonia aqua, 20 deg. drums lb	6¼ to 6½c
Ammonia aqua, 26 deg. drums lb	6¾ to 7 c
Ammonia squa, anhydrous cylinder, lb	30 to 36 c
Ammonium sulphate, bulk F. O. B. Works, per 100 lbs	$2.65 to 2.70
Potash prussiate, yellow casks, lb	18½ to 19 c
Potash prussiate, red casks, lb	35 to 37 c
Soda prussiate, yellow casks,	11 to 11½c
Soda sulphocyanide, barrels, lb	45 to 55 c

COAL TAR BASIC PRODUCTS.

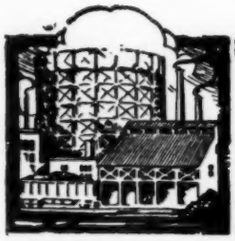
(By Courtesy of Oil, Paint and Drug Reporter)

Benzol C. P. tanks, works, gal	24 to 25c
Benzol, drums, gal	30c
Benzol, 90% tanks, works, gal	23c
Benzol, 90% drums, gal	28c
Napthalene, flake, barrels, lb	5 to 5½c
Napthalene, dyestuff bags, lb	5 to 5½c
Solvent Naphtha, water white works, gal.	24 to 25c
Solvent Naphtha, drums, works, gal	29 to 30c
Toluene, C. P. tanks, works, gal	31c
Toluene C. P. drums, works, gal	36c

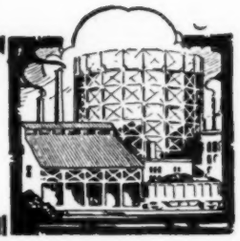
Improvement in the bituminous coal market has not yet materialized. The general situation is as dull as at any time during the last few months; demand is weak and fitful, production holds at rock bottom, a large number of mines are still idle and the running time at those working is curtailed. As a consequence prices have a hard time holding their own at even the low levels of recent weeks. None the less there are indications of an improvement in sentiment, based to some extent upon the gradual disappearance of distress coal.

Production of bituminous coal revived to the extent of 108,000 during the week ended May 3, when, according to the Geological Survey, the output was 6,832,000 net tons. This compares with 6,726,000 tons produced during the preceding week. Anthracite output also took an upward turn, 1,616,000 net tons having been produced, compared with 1,205,000 tons during the week ended April 26.

Prices on petroleum products are seeking lower levels in several sections of the country, and there are indications that refiners in some markets are getting weary of the strain of holding on to large stocks and are beginning to unload. This movement is by no means general, but reflects an angle of the market which, while little discussed, has been much in the mind of the trade for some time past.



NEWS OF THE GAS INDUSTRY



N. Y. City Gas Men Meet and Discuss Service Betterment

Representatives of the gas and electric light companies of the "home boroughs" of the city, Queens, Brooklyn and Richmond, discussed plans for the improvement of service to consumers recently at a meeting at the New York and Queens Electric Light and Power Company office, Bridge Plaza, Long Island City.

Providing customers and prospective customers with information as to improved devices and appliances for their convenience was one of the chief topics. Advertising was voted the best way to let the public know the advantages of these improvements. C. R. Engler, of the New York and Queens Company, led the discussion on this subject.

Making it easy for the public to obtain these new conveniences, through installment and deferred payment plans, was considered in the light of a further service by the companies. George H. Stang, of the Brooklyn Borough Gas Company, led the discussion on this.

William A. Morris, of the Kings County Lighting Company, presided at the meeting as chairman of the "home boroughs" group of the commercial section of the Empire State Gas and Electric Association.

Among the companies represented at the meeting were: New York and Queens Electric Light and Power Company, by L. J. Montgomery, A. F. Rassiga, F. D. Croughley, C. D. Poey, C. R. Engler; Brooklyn Edison Company, by George J. Leibman; Brooklyn Union Gas Company, by J. H. Ghegan; Kings County Lighting Company, by William A. Morris, A. J. Gannoud, Fred D. Grafton; New York and Richmond Gas Company, by John C. Smith; Brooklyn Borough Gas Company, by George H. Stang.

Public Service Co. of Northern Illinois Developing Industrial Business

Chicago, Illinois—The industrial gas department of the Public Service Co. of Northern Illinois is busily at work developing new sources for the use of gas by large industries and through experiment and practical tests is succeeding in showing industries in its district that it is to their advantage. The Public Service Company is especially proud of the reduced rate contract it has recently worked out for industrial gas users, a clause being inserted therein providing for slightly increased rates where the cost of the gas oil goes above 6 cents, the rate, however, being based on 5-cent oil.

One of the most recent experiments in the use of gas is in the making of brick. Where only the ordinary pressure gas is available, it is necessary to install special pumps, which force the gas under 10 pounds pressure to the brick kilns. In instances where high pressure gas can be taken direct from the mains, no pump is necessary. The estimated cost of this special pump and its installation runs close to $8,500. Experiments are also being made in plants making glass, and so far engineers of the Public Service Company report, the results have been eminently satisfactory. In the brick kilns and glass furnaces, oven gas direct from the fires is combined with the industrial gas, thus giving the gas at the kiln or furnace a higher heating unit.

At the starch and dextrine plants at Argo, on the southwest outskirts of Chicago, experiments are just being completed in the use of industrial gas for the manufacture of these products, but as yet no results have been given out for publication.

Special stress is also being put upon the greater use of gas by home owners and apartment buildings, especially for heating, where the special gas heating furnace sold by the company can be installed. As a special inducement to its home-owning customers, the company is pushing the sale of gas ranges and offering free a 42-page set of American-made Limoges china to every purchaser. The old range can be traded in on a deal of this kind.

New Gas Rates for Detroit Announced by Board of Arbitration at Detroit, Mich.

The gas rates recommended by the board are as follows and are characterized as being lower than those existing in any other similar city in America:

0 ft. to 50,000 ft.	79c.
50,000 ft. to 100,000 ft.	75c.
100,000 ft. to 500,000 ft.	70c
500,000 ft. to 1,000,000 ft.	66c.
1,000,000 ft. to 5,000,000 ft.	62c.
5,000,000 ft. and upwards.	58c.

Minimum bill, which includes the consumption of 1,200 cu. ft. or less per month..... $1.

All rates effective May 1, 1924.

In regard to the reduction of the calorific power of the gas, the board had the following to say:

"Economy will result in the reduction of the calorific value from 600 B.t.u. to 530 B.t.u. This will not in any way affect the efficiency of the gas. Besides being agreed to by all parties who appeared before the board, it was expressly recommended by John C. McCabe, an officer of the city, who made exhaustive tests to determine the point at which the fuel efficiency would be lessened by this reduction. So that, hereafter, the monthly average calorific value shall be 530 B.t.u., with an allowable maximum and minimum variation not exceeding 5 per cent, in either direction; and no attention is to be given to the candle power of the gas for illuminating purposes."

Cities Service Co. in March

The gross earnings of Cities Service Company for the twelve months ending with March 31, 1924, were $16,631,787, as compared with $15,643,278 in the corresponding period of the preceding year. In the same period, net earnings amounted to $16,136,533, as compared with $15,176,308 and net to common stock and reserves was $8,681,546, as compared with $7,759,917. This was the equivalent of $18.76 a share earned on the average amount of common stock outstanding. In the twelve months ending March 31, 1923, $16.65 a share was earned 2.73 times, as compared with 2.55 times in the twelve months ending March 31, 1923.

In March gross earnings totaled $1,803,418, as compared with $1,776,487 in March, 1923. Net was $1,766,223 against $1,725,973 and net to common stock and reserves was $1,182,194 against $1,083,298 in March, 1923.

Home Rule Cities Not Subject to Utilities Commission

Holyoke, Colorado, is a home rule town. It owns and operates an electric power plant. The City Council fixed the rates, but the state public utilities ordered a higher schedule, and some of the city authorities sought to put into effect the rates as named by the commission. The case went to court, the lower court agreeing with the Council's action, saying that the commission had no right to interfere. Then it went to the State Supreme Court and the high court ruled:

"Any town of more than 2,000 inhabitants can, by adopting a charter, free itself from any commission that might have the power to interfere with purely local affairs." Hence it is that the state public utilities commission have no voice over a home rule town, but, where the utilities are privately owned, they have.

Gas for Baking

The Colorado Bakers Association held its annual meeting in Denver early in April. C. E. Muehlberg, manager of the industrial fuel department for the Public Service Company of Colorado, was one of the principal speakers. He emphasized the wonders of gas in culinarydom. The bakers who were fortunate enough to have a good gas supply, smiled their approval.

Gas Company Wins Franchise Extension

At the recent election, held at Fort Collins, Colorado, the proposition to extend the franchise of the Poudre Valley Gas Company for a period of 20 years was voted on, and it was carried by 873 against 486. Only taxpayers were allowed to vote on this question.

Pitch Plant About Ready

With an output of about 100 tons daily, the pitch plant of the Standard Oil Company of Indiana, at Casper, Wyoming, will start operation about May 1. Pitch is said to be in much demand.

Giving Away a Gas Range

Denver, Col.—Davis & Shaw Furniture Company of Denver, in co-operation with the manufacturers of a nationally advertised gas range, are offering to give one free to the party who has the oldest gas range in use, regardless of make.

There are no other requirements to get this range, but, in addition to the gift, they are offering to all one of the ranges at $5 down and a whole year to pay the remainder due, giving to every purchaser during the special sale a set of 42 pieces American Limoges china.

Contracts Awarded

The Public Service Company of Denver, Colorado, has placed a contract with the Gas Machinery Company for an eleven-foot carburetted water gas apparatus.

This new set will stand alongside of the three eleven-foot sets formerly furnished in Denver by the Gas Machinery Company.

The contract includes air and steam meters, pyrometer, explosion check valve, hand hydraulic control and auxiliary equipment.

Northern States Power Company Makes Annual Report

The annual report of Northern States Power Company for 1923 shows that after payment of the regular dividend on the preferred stock quarterly dividends at the rate of 8 per cent per annum were paid on the common stock, leaving a balance of $1,580,324 available for amortization, depreciation and surplus, as compared with a balance of $1,134,526 in 1922. Gross earnings were $15,489,790 and net earnings $6,580,991, these figures representing an increase of 11.58 per cent in gross and 13.83 per cent in net over the preceding year.

New Gas Co. Is Being Formed

Birmingham, Ala.—The Tarrant City and Inglenook Gas Company is in process of formation, according to information, and before long domestic gas will be supplied the citizens of the two growing cities. The gas will come from the by-product coke oven plant of the Alabama By-Product Corporation at Tarrant City, and refining boxes and other machinery have been ordered.

Franchises have been obtained for the gas and mains will be laid in the very near future, announcement being made that within six or eight months installation of fixtures in houses will be under way, and the product will be offered for use by fall. It is estimated that not less than 500 meters will be placed as soon as the mains are laid and this number will be increased considerably as the mains are extended.

The company will probably have a capitalization of $100,000. Not less than $50,000 will be expended in installing necessary machinery and mains for the service.

Crisfield Light & Power Co. Improves Gas Plant

Crisfield, Md. — The Crisfield Light and Power Co. has recently installed two additional high pressure gas storage tanks of 10,000 cu. ft. capacity each, and is extending the high pressure mains into Lawsonia, Byrdtown, Jacksonville and Johnson's Creek, this makes an addition of about four miles of mains.

This will open up a large rural territory and add a large number of new domestic customers.